AMENDMENTS TO THE CLAIMS

Applicant submits below a complete listing of the current claims, including marked-up claims with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing. This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of the Claims

1.   (Currently amended) A method of operating a plurality of computers to implement a distributed method for assigning designations to endpoints for use in a peer-to-peer collaboration system having a plurality of members that share a telespace and exchange data change requests, the method comprising:

operating at least two of the plurality of computers in the peer-to-peer collaboration system, the at least two of the plurality of computers used by inviting members to:

independently assign unique designations to endpoints of members invited to join the telespace, each designation of an endpoint of an invited member comprising:

(a) a value indicative of the order in which the invited member was invited by a respective inviting member to join the telespace; and

(b) a unique endpoint designation indicative of the respective inviting member; and

order received data change messages based on endpoint designations in the received data change messages.

2.   (Previously presented) The method of claim 1 wherein (a) comprises a unique numeral designation for each endpoint.

3.   (Previously presented) The method of claim 2 wherein (b) comprises a unique serial numeral designation for each endpoint, wherein the serial numeral designation comprises a series of numbers including the numeral designation of the respective inviting member.

4.   (Original) The method of claim 1, wherein a plurality of the designations of different endpoints each indicate a chain of inviting members.

5.   (Original) The method of claim 1, wherein endpoint designations comprise a number of orders, including a first order designating a founding member of the telespace, and at least a second order designating a member invited to join the telespace by the founding member.

6.   (Previously presented) The method of claim 1,
wherein the method comprises:

> upon creation of the telespace, an endpoint corresponding to a founding telespace member assigning itself a unique designation comprising a first order digit; and

> subsequent to creation of the telespace, assigning, by the founding member, each of a plurality of endpoints corresponding to a new member of the telespace invited into the telespace by the founding member a unique designation comprising the first order digit of the founding telespace member, and a second order digit, the second order digits of the designations of endpoints of the new members being in a sequential order indicating the order in which the new members joined the telespace.

7.   (Previously presented) The method of claim 6 further comprising:
inserting endpoint designations into data change requests.

8.   (Previously presented) The method of claim 7 further comprising:
using the endpoint designations in data change requests to resolve a dependency collision between two data requests.

9.   (Previously presented) The method of claim 8 wherein using the end point designations in data change requests to resolve a dependency collision comprises resolving a dependency collision while maintaining total ordering.

10.   (Previously presented) The method of claim 9 wherein using the end point designations in data change requests to resolve a dependency collision comprises:

comparing endpoint digits on an order-by-order basis; and

scheduling data change requests so that data change requests with the lowest endpoint digits in the lowest orders are scheduled for processing first.

11.   (Previously presented) The method of claim 1 further comprising:

inserting endpoint designations into data change requests.

12.   (Previously presented) The method of claim 11 further comprising:

using the endpoint designations in data change requests to resolve a dependency collision between two data requests.

13.   (Previously presented) The method of claim 12 wherein using the end point designations in data change requests to resolve a dependency collision comprises resolving a dependency collision while maintaining total ordering.

14.   (Canceled)

15.   (Previously presented) The method of claim 1 wherein each unique endpoint designation is unique within the telespace.

16.   (Previously presented) The method of claim 1, wherein each unique endpoint designation is unique within the collaboration system.

17.   (Canceled)

18.   (Currently amended) A distributed apparatus for assigning designations to endpoints for use in a peer-to-peer collaboration system having a plurality of members that share a telespace and exchange data change requests, the apparatus comprising:

means for forming the telespace by inviting members to join the telespace; [[and]]

means for assigning a unique designation to each endpoint of each member of the telespace, each designation of a member comprising a portion indicative of the order in which the member joined the telespace and a portion indicative of an inviting member inviting the member to join the telespace, the means for assigning comprising means operable by each of the inviting members for assigning a unique designation to each new telespace member that an inviting endpoint invites into the telespace; and

means for resolving dependency collisions between a plurality of data change messages, the dependency collisions being resolved based on respective unique designations in each of the plurality of data change messages, the unique designations being assigned by the means for assigning.

19.   (Original) The apparatus of claim 18 wherein the means for assigning endpoint designations for each member comprises means for assigning a unique numeral designation to each endpoint.

20.   (Previously presented) The apparatus of claim 19 wherein the means for assigning the unique designation comprises means for assigning a unique serial numeral designation to each endpoint wherein the serial numeral designation comprises a series of numbers including the numeral designation of the inviting member.

21.   (Original) The apparatus of claim 18, wherein a plurality of the designations of different endpoints each indicate a chain of inviting members.

22.   (Previously presented) The apparatus of claim 18, wherein the unique designations comprise a number of orders, including a first order designating a founding member

of the telespace, and at least a second order designating a member invited to join the telespace by the founding member.

23.   (Previously presented) The apparatus of claim 18, wherein the means for assigning the unique designation comprises:

means operable upon creation of the telespace, for assigning to an endpoint corresponding to a founding telespace member a unique designation comprising a first order digit; and

wherein the means for assigning invited member endpoint designations comprises: means operable subsequent to creation of the telespace and by the founding member, for assigning each of a plurality of endpoints corresponding to a new member of the telespace invited into the telespace by the founding member a unique designation comprising the first order digit of the founding telespace member, and a second order digit, the second order digits of the designations of endpoints of the new members being in a sequential order indicating the order in which the new members joined the telespace.

24.   (Original) The apparatus of claim 23 further comprising means for inserting endpoint designations into data change requests.

25.   (Canceled)

26.   (Currently amended) The apparatus of claim [[25]] 24, wherein the means for resolving a dependency collision comprises means for resolving a dependency collision while maintaining total ordering.

27.   (Original) The apparatus of claim 26 wherein the means for resolving a dependency collision comprises:

means for comparing endpoint digits on an order-by-order basis; and

means scheduling data change requests so that data change requests with the lowest endpoint digits in the lowest orders are scheduled for processing first.

28.   (Original) The apparatus of claim 18 further comprising means for inserting endpoint designations into data change requests.

29.   (Canceled)

30.   (Currently amended) The apparatus of claim [[29]] 28, wherein the means for resolving a dependency collision comprises means for resolving a dependency collision while maintaining total ordering of the data change requests in each of a plurality of endpoints.

31.   (Canceled)

32.   (Currently amended) The apparatus of claim 18 wherein the means operable by each of the inviting members for assigning the unique designation comprises, for each member invited to join the telespace by another telespace member, means in the inviting member for assigning a endpoint designation that is unique within the telespace.

33.   (Currently amended) The apparatus of claim 18, wherein the means operable by each of the inviting members for assigning the unique designation comprises, for each member invited to join the telespace by another telespace member, means operable by the inviting member for assigning a endpoint designation that is unique within the collaboration system.

34.   (Previously presented) The apparatus of claim 18, wherein the means for assigning the unique designation comprises a pseudo-random number generator that generates each designation.

35.-37. (Canceled)

38.   (Currently amended) A computer readable storage medium comprising computer-executable instructions that, when executed by a processor, perform a method of operating a computer of an invited member of a peer-to-peer collaboration system in which computers used by a plurality of members communicate changes to a shared telespace by transmitting change messages and the computers used by the plurality of members maintain a copy of the shared telespace by applying changes in the change messages, the method comprising:

   receiving an invitation for the invited member to join the shared telespace, the invitation being sent by an inviting member of the plurality of members having an inviting member endpoint designation;

   receiving from a computer of the inviting member of the peer-to-peer collaboration system an invited member endpoint designation for the invited member, the invited member endpoint designation having a hierarchical representation with a first portion identifying the inviting member endpoint designation and a second portion identifying when the invited member was invited to join the shared telespace relative to when the inviting member invited other members to join the shared telespace; and

   transmitting change messages indicating changes to the shared telespace, each change message comprising the invited member endpoint designation.

39.   (Previously presented) The computer-readable storage media of claim 38, wherein the second portion of the invited member endpoint designation comprises a sequence number generated by the inviting member.

40.   (Previously presented) The computer-readable storage medium of claim 38, wherein the method further comprises:

   inviting a second invited member to join the telespace; and

providing to a computer of the second invited member a second invited member designation, the second invited member designation having a hierarchical representation comprising:

a first portion identifying the inviting member endpoint designation;

a second portion identifying when the invited member was invited to join the shared telespace relative to when the inviting member invited other members to join the telespace; and

a third portion identifying when the second invited member was invited to join the shared telespace relative to when the invited member invited other members to join the telespace.